

## REMARKS

Claims 1-7 and 11-24 are rejected under 35 USC §102(b) as being anticipated by Heffelfinger et al ('692). Applicant respectfully submits that the Heffelfinger reference fails to anticipate Applicant's claimed invention.

Applicant's claimed subject matter as set forth in Claim 1 is directed to a barrier laminate having a barrier layer comprising an effective amount of an essential oil anti-scalping additive. The Heffelfinger reference fails to teach or suggest any anti-scalping additive capabilities. Further, to the extent Heffelfinger does disclose the use of inorganic particles, it is noted that such particles are present in very minute amounts such as 0.23% which is typical for anti-blocking agents.

As set forth in Applicant's specification on page 14, lines 12-28, Applicant's specification provides that effective amounts of essential oil and anti-scalping additives occur in a range which includes a range of about 20 to 35% by weight of the inorganic additive. Further, Applicant describes in the specification the routine steps and experimentation one could perform to determine other ranges of effective amounts of essential oil anti-scalping additives. To the extent the anti-blocking agents in Heffelfinger are present in amounts several orders of magnitude less than the operative examples provided in Applicant's specification, it is respectfully submitted that Heffelfinger does not anticipate Applicant's claimed subject matter. Heffelfinger is silent as to the creation of a barrier layer for paperboard substrate having anti-scalping additives. The amounts of inorganic additives disclosed in Heffelfinger are significantly lower than the operative amounts identified by Applicant and are directed to different purposes within the art. Further, to the extent that Heffelfinger is directed to optically clear, biaxially oriented (i.e., strengthened) films, adding the exemplary amounts of inorganic additives to film layers of Heffelfinger would impair both the desired optical properties and strength characteristics of Heffelfinger.

Applicant respectfully submits that claims 2, 12, 13, and new claim 27 are in condition for allowance for at least the reason that they depend from an allowable independent claim. Additionally, Applicant notes that new claim 27 is now directed to an extrusion-coated barrier layer. Applicant respectfully submits that extrusion coating the material in Heffelfinger would render the biaxially oriented film properties inoperative

and therefore there is no anticipation of motivation to extrusion coat a film structure taught by Heffelfinger onto a barrier board.

With respect to independent claim 4 and claims 11 and 14 which depend therefrom, Applicant has amended claim 4 to clarify that the skin coat comprises an effective amount of an anti-scalping additive. As noted above with respect to claim 1, the cited reference fails to address any aspect of anti-scalping additives or features within a skin coat of a heat sealable laminated blank. Rather, the cited reference is directed solely to films having different properties and incorporating inorganic additives at much lower levels and for different purposes than disclosed and claimed by the Applicant. Accordingly, Applicant respectfully submits that claims 4, 11, and 14 are in condition for allowance.

With respect to independent claim 5 and claims 6, 7, and 15, it is respectfully submitted that the claimed subject matter is directed to a process for limiting scalping of essential oils from a paperboard container. The Heffelfinger reference cannot anticipate Applicant's claimed subject for it is silent as to the process of scalping of essential oils. Additionally, as set forth in the remarks to claim 1 above, the cited reference is silent as to the effective amounts described and claimed by Applicant of inorganic additives which has been found to limit the scalping of essential oils in a paperboard container. Accordingly, it is respectfully submitted that independent claim 5 and the claims dependent thereon are in condition for allowance.

Claim 17 has been amended to clarify that the barrier layer contains an effective amount of an additive which reduces scalping of an essential oil. As addressed above, the cited reference does not disclose any benefit of additives with respect to essential oil scalping problems nor does it disclose amounts which have been found effective in reducing the scalping of essential oils in association with a paperboard substrate. Accordingly, Applicant respectfully submits that claim 17 and dependent claim 18 are in condition for allowance.

Independent claim 19 and dependent claim 20 are also directed to a process of limiting scalping of essential oils. The cited reference is silent as to any role of essential oils within the film structure and therefore cannot anticipate Applicant's process. In

addition, Applicant notes that claim 20 is directed to the additional step of placing an additional layer of polyolefin as a product contact surface to the oil scalping reducing layer. As set forth in Applicant's specification on page 13, beginning with line 5, the use of an additive free skin coat layer adjacent to the barrier layer is described with improvements to heat sealability. The cited reference does not disclose the use of a separate, additive-free skin coat layer and accordingly fails to anticipate the subject matter of Applicant's claim 20.

Claims 21 and dependent claims 22-24 are directed to extruded polymer layers (not film layers) having inorganic additives added in amounts sufficient to reduce water vapor transmission. As described in Applicant's specification on page 13, lines 21-27, a 7% reduction in WVTR values can be attained by inclusion of an effective amount of an inorganic additive into one or more of the barrier layers. The cited reference does not disclose the use of extruded layers applied to a paperboard substrate nor disclose the use of multiple vapor barrier layers having inorganic additives in amounts sufficient to bring about a reduction in the WVTR properties. Accordingly, it is respectfully submitted that claim 21 is not anticipated by the cited reference.

With respect to claims 22 through 24, it is respectfully submitted these claims are in allowance for at least the reason that they depend from an allowable independent claim. In addition, Applicant notes that claim 22 has a heat sealable layer of polyethylene having effective amounts of an essential oil scalping additive. The combination of multiple water vapor transmission reducing barrier layers combined with a heat sealable layer of an essential oil anti-scalping additive is not disclosed in the cited reference.

With respect to claim 24, Applicant notes that the cited reference fails to teach or suggest modifying adhesive tie layers with inorganic additives designed to improve the vapor barrier properties of the resulting laminate. Accordingly, claim 24 is believed to be in condition for allowance.

Claims 1-6, 11, 12 and 19-24 are rejected under USC §102(e) as being anticipated by Gu '333. Applicant respectfully submits that Gu reference does not establish a *prima facie* case of anticipation. Rather, Gu merely teaches that various

fillers and antioxidants can be co-extruded into a polymer layer and include fillers such as calcium carbonate. However, Applicant respectfully submits that the reference does no more than disclose the well known use of fillers and antiblocks used within extruded layers. There is no teaching or suggestion that the materials are present in any amounts or having any utility with respect to reducing the scalping of essential oils in a barrier skin coat layer.

The deficiency of the Gu reference is particularly evident in view of Applicant's process claims as set forth in independent claims 5 and 19 and dependent claims thereon. There is no recognition within the Gu reference of oil scalping. Accordingly, Gu cannot anticipate Applicant's claimed process for reducing scalping of essential oils. In addition, there is no disclosure of the relative amounts of the various additives that Gu discloses. As best seen in reference to the previously cited Heffelfinger reference, the loading levels of typical additives and fillers are very low weight percents that would be ineffective at providing anti-scalping reducing properties. Accordingly, Applicant respectfully submits that independent claims 5 and 19 are not anticipated by the Gu reference.

With respect to claim 21 and dependent claims thereon, the Gu reference is silent with respect to water vapor barrier layers. Accordingly, there is no anticipation of Applicant's claimed subject matter of a paperboard substrate having first and second water vapor barrier layers in which the respective layers each comprise WVTR reducing amounts of an inorganic additive. The amounts described in Applicant's specification and set forth as "effective amounts" in Applicant's claims are not disclosed in Gu and, based upon the traditional loading levels of conventional additives and antiblocks, such levels fall outside the effective amounts claimed by the Applicant.

Claims 1-7 and 10-19 are rejected under 35 USC §102(e) as being anticipated by Castle '873. Applicant respectfully submits that the Castle reference fails to establish a *prima facie* case of anticipation of Applicant's claimed invention. The Castle reference is directed to reduce the uptake of offensive odors through a container and uses examples directed to dairy cartons. As is recognized in the art, dairy products do not

contain essential oils and accordingly there is no anticipation by Castle of a structure having effective amounts of anti-scalping additives present within a skin coat layer.

While the Castle reference does disclose the optional addition of fillers to increase stiffness or odor barrier properties, there is no recognition that the fillers can serve to reduce oil scalping or are used in any level sufficient to bring about the reduction in essential oil scalping or water vapor reduction properties as set forth in Applicant's claims. In fact, the comparative data set forth in Castle in Example 1 makes no use of fillers in order to obtain the noted improvements. Rather, the improvements were all associated with the incorporation of nylon 6 into the blend (paragraph 0024).

Since Castle is directed to cartons having different barrier needs and requirements, discloses no ability or feature of essential oil reducing additives, and is silent as to amounts of optional fillers, Applicant respectfully submits that Castle fails to anticipate Applicant's claimed subject matter.

Claims 1-7 and 9-24 stand rejected under 35 USC §103(a) as being unpatentable over Heffelfinger et al. Applicant respectfully submits that the Heffelfinger reference fails to establish a *prima facie* case of obviousness. As discussed above with respect to the §102 rejections of the claims, the Heffelfinger reference does not address issues of essential oil scalping nor water vapor transmission rates. There is no recognition within Heffelfinger that the operative amounts as described in Applicant's specification and as set forth as "effective amounts" in the claims would be suggested by any fair reading of the Heffelfinger reference.

Since the Heffelfinger reference is silent with respect to essential claim features such as essential oil barrier layers, water vapor barrier layers, processes for reducing scalping of essential oils, the Heffelfinger reference cannot establish a *prima facie* case of obviousness.

Claims 1-7 and 10-20 are also rejected under 35 USC §103(a) as being unpatentable over Castle. For the reasons address above with respect to the anticipation rejection by Castle, Applicant respectfully submits that Castle fails to establish a *prima facie* case of obviousness. Castle is not directed to a paperboard article having barrier layers capable of reducing the uptake of essential oils. To the

extent Castle was directed to barrier packaging, such packaging is given the context of milk and the barrier properties involved are associated with the uptake of odors. The barrier properties needed for controlling or other essential oil scalping as well as barrier layers needed to bring about the reduction in WTVR are in no way taught or suggested by the Castle teachings. In particular, for instance, no where in Castle is there disclosed, taught, or suggested any ability to control essential oil uptake. The fact that the Castle comparative examples fail to include the optional fillers would not lead one having ordinary skill in the art to set up the respective barrier layers as claimed by the Applicant. Accordingly, Applicant respectfully submits that the claims are patentably distinct over the Castle reference.

By way of the above amendment, Applicant has added new claims 25-27. Applicant notes that claim 25 is now directed to an extruded barrier layer which distinguishes over the film barriers of Heffelfinger. Additionally, claim 25 expressly sets forth loading levels of between about 20% to about 35% by weight. Applicant respectfully submits that these limitations distinguish over the art of record. Accordingly, the new claims are believed to be in condition for allowance.

Inasmuch as all outstanding issues raised by the Examiner have been addressed, it is respectfully submitted that the present application is in condition for allowance, and action to such effect is earnestly solicited. The Examiner is encouraged to telephone the undersigned at his/her convenience should only minor issues remain after consideration of the present Amendment, to permit early resolution of same.

Please charge any additional fees required by this Amendment to Deposit Account No. 50-3172.

Respectfully submitted,

J. BENNETT MULLINAX, LLC

A handwritten signature in black ink, appearing to read 'J. B. Mullinax', written in a cursive style.

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